

THE PRODUCTIVITY OF EXOTIC AND INDIGENOUS PIGS UNDER VILLAGE CONDITIONS—PART 2

ABSTRACT

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A total of 129 exotic weaner pigs were distributed to village people at a number of centres in the four districts of the Highlands. Mortalities approached 30 per cent six months after distribution, with weight gain averaging less than 100 grams daily. The implications of these findings for increasing village productivity are briefly discussed.

INTRODUCTION

IN the first part of this paper (Malynicz 1973) the results of distributing 16 pigs into a typical Highland village were presented. These indicated that pigs under village conditions sustained high mortalities, and that the growth rate of survivors was low. There did not appear to be any association between genotype and either mortality or growth rate, with exotic and indigenous pigs suffering equally high losses.

The present study contains the results of a larger survey into the performance of 129 exotic breed pigs which were distributed to a number of villages throughout the Highlands.

MATERIALS AND METHODS

The normal scheme of distribution for pigs from D.A.S.F. piggeries is as follows. First a Rural Development Officer places an order for stock through his District Livestock Officer, who relays the request to the nearest piggery. Weaner pigs are then sent as soon as they are available to the Extension Centre from which the animals are sold to village people at a subsidized price. In many cases where Extension Centres are inaccessible by road, pigs are flown to their destination. For the pigs used in the survey the normal distribution procedures were followed, with the exception that the pigs were weighed monthly after distribution.

All pigs distributed throughout the survey were either purebreds (Berkshire, Tamworths or Large Blacks) or crosses with the indigenous breed but containing at least three-quarters Exotic blood.

Superimposed on the general distribution survey were two smaller studies conducted at Mount Hagen and Henganofi. At Mount Hagen two groups of pigs matched for litter, sex and body weight were distributed to two different villages, Plymp and Beapru. The objective was to determine the degree of variation which can occur in the performance of distributed pigs in two adjacent villages.

The second set of observations was carried out to determine whether putting the pigs on a village diet of sweet potato, meat meal and grazing for one month prior to distribution would improve survival and performance. The control group received a normal cereal based ration and was housed intensively on concrete. The pigs in these two treatment groups, which were called "hard" and "control" were distributed through the Henganofi Extension Centre.

RESULTS AND DISCUSSION

The mean monthly liveweights and average daily weight gains of the distributed pigs is shown in Table 1. It is apparent that there is considerable variation in the performance of the pigs in terms of weight gain, with pigs at Minj gaining weight at almost nine times the rate of those at Kundiawa. Similar pigs retained at the Goroka piggery which have been fed standard commercial rations gain between 400 and 600 grams daily. This comparison demonstrates that growth under village conditions, even at its optimum is severely depressed. It is considered that the main factors restricting growth are undernutrition of all nutrients with the possible exception of Vitamin A. The comparison between Plymp and Beapru shows the wide variation that can be found even when very similar pigs are distributed to adjacent villages.

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Table 1.—Mean monthly liveweights of exotic pigs distributed in the Highlands

Location	Number of pigs	MEAN MONTHLY LIVEWEIGHTS (kg)						Average Daily Gains (g)
		1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	
Kundiawa	13	16.09	15.82	N.A.	19.23	21.82	N.A.	16
Margarima	21	N.A.	N.A.	N.A.	N.A.	22.73	N.A.	41
Minj	10	15.91	15.77	20.09	24.09	33.41	39.09	140
Pangia	24	N.A.	N.A.	N.A.	22.64	N.A.	N.A.	48
Wapenamanda	21	21.14	25.91	28.86	35.14	38.32	N.A.	126
Plymp	10	18.95	21.50	23.95	26.27	27.04	38.64	125
Beapruai	10	18.77	20.30	19.82	20.22	N.A.	24.00	29

N.A. = Not available.

There does not appear to be any benefit from introducing pigs to a simulated village environment prior to distribution. There was no significant difference in the growth rates of the "hard" and "control" groups of pigs as shown in Table 3.

The mortality figures shown in Table 2 tend to reflect the growth performance of Table 1, with villages in which growth rates were above average having the lowest mortalities and vice versa. Six months after distribution at least one-third of the pigs can be expected to have died. The causes of deaths were not determined but it is felt that malnutrition and parasitic disease would be the main underlying causes. It should be noted that the mortalities sustained by pigs in the present survey are lower than those observed by Harvey (1965) and at Okiufa (Malynicz 1973).

The observations presented in this paper support the findings of Harvey (1965) and those obtained at Okiufa in demonstrating that exotic pigs are unable to express their potential productivity under village environments. Considerable changes in nutrition and management will be required before exotic pigs can be expected to be more productive than their indigenous contemporaries.

REFERENCES

- HARVEY, P. R. (1965). Monthly Report, District Veterinary Officer, Goroka.
- MALYNICZ, G. L. (1973). The productivity of exotic pigs under village conditions, Part 1. *Papua New Guinea Agric. J.*, (this issue).

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Table 2.—Cumulative mortality of exotic pigs distributed in the Highlands

Location	of pigs Number	CUMULATIVE MORTALITY RATE (per cent)					
		1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month
Kundiawa	13	0	0	0	0	31	39
Margarima	21	N.A.	N.A.	N.A.	N.A.	N.A.	14
Minj	10	0	0	0	10	20	30
Pangia	24	N.A.	N.A.	N.A.	42	N.A.	N.A.
Wapenamanda	21	0	10	10	19	19	N.A.
Plymp	10	0	0	0	0	0	20
Beapruai	10	0	0	0	0	10	30

N.A. = Not available.

Table 2.—The performance* of pigs fed and managed under village conditions before distribution

	Treatment	
	Hard	Control
Initial weight (Kg)	18.27	18.14
Weight at 1st month (Kg)	23.23	22.95
Weight at 2nd month (Kg)	25.82	25.68
Weight at 3rd month (Kg)	33.64	32.05

* The final cumulative mortality after three months for the hard and control groups were 10 and 20 per cent respectively.